New Jersey's CSO Control Program Making Strides

As the state with the most boats, cars, highways, railroads, and people per square mile, New Jersey's high density has created the nation's most diverse and challenging water quality problems. While many of these problems have already been addressed, combined sewer overflows (CSOs) continue to pollute the state's waterways, especially during storm events. Long recognized as a significant source of pollution, CSOs remain a major environmental concern in several areas of the state. As a result, correcting combined sewer overflows is one of the Whitman administration's top water quality priorities.

Why Are CSOs A Problem?

Combined sewers are designed to carry sanitary sewage at all times and stormwater collected from streets and other sources, thus serving a combined purpose. However, when it rains, combined sewer systems may not have the capacity to carry all of the stormwater and sanitary sewage, causing an overflow into the nearest waterbody. These untreated overflows, which contain pathogens (disease causing organisms), floatable debris, toxic metals, settleable solids, toxic organic chemicals, nutrients, and organic contaminants, degrade water quality and adversely impact aquatic animals, plants, and human health in certain situations. In the New Jersey/New York Harbor Estuary complex alone, CSOs contribute 89% of the pathogenic indicator organisms.

Where Are CSOs?

There are approximately 280 individual CSO discharge points in 24 communities located in 8 counties. These discharge points are in older, urban areas along tidal portions of the Delaware River in Camden, Gloucester, and Mercer counties, along the tidal portion of the Raritan River in the City of New Brunswick, and throughout the New Jersey/New York harbor complex. The discharges impact 25 waterbodies in 10 watersheds.

Fixing the Problem

The Department of Environmental Protection (DEP) has maintained a comprehensive approach for CSO control, including both strict regulatory controls, as well as significant state and federal funding commitments. The following initiatives are an example of this approach:

- Dry weather overflows are prohibited. The DEP strictly enforces this.
- New Jersey was one of the first states to apply for funds from the national marine CSO grants program in 1984. The state successfully secured the largest amount from this fund, approximately $14 million of a $60 million dollar pool available nationwide. This money was used for the rehabilitation of CSO control facilities in Jersey City, Elizabeth City and Perth Amboy.
- In 1988, New Jersey enacted the Sewerage Infrastructure Improvement Act which targeted the control of solids and floatables in CSOs. An appropriation of $33.5 million dollars was made to this program. In 1989, the DEP began providing planning and design grants under this act and bolstered this initiative with an additional $50 million dollar appropriation.
- In 1990, with EPA Region 2's endorsement, the DEP began issuing NJPDES permits to implement the national CSO control strategy initiatives. These permit actions began the first phase of the state's CSO control program.

- In November 1998, DEP received the EPA's approval of New Jersey's CSO Long-Term Control Planning process (LTCP). This process is discussed in more detail below.
- New Jersey's Environmental Infrastructure Trust Program recently reached the milestone of having $1.6 billion available for water infrastructure projects, a portion of which has been dedicated to CSO projects.

- In 1995, the DEP administered a stakeholder process with owners and operators of sewage treatment plants and combined sewer systems concerning the LTCP process.

Since conducting the stakeholder process, the DEP has developed several critical initiatives that have influenced its polices, programs and decision-making process. Among these are the implementation of a department-wide Strategic Plan, a cooperative National Performance Partnership System or NEPPS, and a statewide watershed management framework. Taken together, these interrelated initiatives form the foundation of New Jersey's LTCP CSO Control Plan. The following briefly explains these initiatives:

Strategic Plan

This plan sets forth the following six primary long-term goals of the agency, which include:

- Clean and Plentiful Water
- Clean Air
- Safe & Healthy Communities
- Healthy Ecosystems
- Abundant Open Space, and
- Open & Effective Government

The plan provides the framework for systematically evaluating the DEP's effectiveness in solving New Jersey's environmental problems. The Strategic Plan and the department's annual workplans emphasize CSO control as a priority objective. This over-arching plan is complemented and implemented through the NEPPS agreement.

NEPPS

In January 1997, DEP and EPA jointly executed the initial NEPPS agreement. Under this agreement, the department sets environmental goals, defines goal-oriented activities, and uses environmental indicators to measure progress towards those goals. NEPPS also includes priority setting to match resources and implement the DEP's mission through program specific workplans.

Watershed Management

In January 1997, the DEP released the "D*raft Statewide Watershed Management Framework Document for the State of New Jersey***."** New Jersey joined with the EPA and others in the private and public sectors to promote a watershed management approach as a means to enhance water quality. Using sustainable management principles and the NEPPS process, the DEP is moving toward a more holistic watershed approach to better protect water resources and measure progress.

The watershed management document provides a coordinating framework for environmental management that focuses public and private sector efforts on defined geographic areas of the state. Watershed

management plans take into consideration both ground and surface water flow, point and nonpoint sources of pollution, air deposition of pollutants, and land and water uses and impacts.

Partnerships

Since 1988, DEP has been working with EPA Region 2 to develop a process for satisfying the national CSO requirements. Last November, EPA endorsed New Jersey's proposed LTCP process.

The DEP is also working with local governments to achieve the LTCP goals. The following are four prominent examples of these partnerships:

- The department is currently working with the Passaic Valley Sewerage Commissioners (PVSC) on an extensive project to reduce CSO discharge frequencies by 60% in North Jersey. The PVSC has worked with its member municipalities in reducing, controlling and, in some cases, eliminating surface water discharges from CSOs. PVSC's present upgrade proposal will allow their facilities to handle sustained flows up to 700 million gallons per day - more than twice the capacity they are treating in the system today.

- In Camden County, the department worked with the cities of Camden and Gloucester and the Camden County MUA to develop a partnership for the planning, design and construction of CSO rehabilitation measures. This work has been completed. A subsequent effort is now underway for monitoring and modeling activities, as well as the development of plans for the control of solids and floatables. This ongoing work is being funded with a $987,000 grant under the Sewage Infrastructure and Improvement Act program.

- The City of New Brunswick, upon completion of a study funded by a $53,000 planning grant, is pursuing sewer separation and the elimination of CSO discharges as its LTCP. The DEP, in conjunction with the New Jersey Environmental Infrastructure Trust, has assisted the city by providing over $11 million for the rehabilitation and separation of the combined sewer system, and elimination of CSO discharges.

- The City of Trenton has separated and eliminated all but one CSO point. By constructing a 20 million-gallon detention basin and maximizing the performance of the existing treatment facilities, Trenton has reduced the frequency of CSO discharges from 70 a year to less than one per year. The city furthered their efforts by addressing innovative end-of-pipe netting facilities to control the discharge of solids and floatables.

CSO Control Program – Phase I

In the first phase of the CSO control program, the department focused its efforts on:

- Identification and elimination of dry weather overflows;
- The control of solids and floatables; and
- The implementation of technology-based solutions.

These measures were implemented a NJPDES general permit for combined sewer systems and other similar enforceable commitments such as Administrative Consent Orders and individual NJPDES permits.
Permittees who own or operate any portion of a combined sewer overflow system are required to:

- Develop and implement technology-based control measures including the nine minimum control measures identified in the national CSO control policy.
- To implement control measures that remove solids and floatables from discharges, and
- To identify and eliminate all dry weather overflows

These permit actions also initiated the LTCP process by requiring system monitoring and modeling activities for CSOs.

To assist the CSO communities in meeting program requirements, the DEP has awarded nearly $8 million in planning grants and $3.2 million in design grants. In addition, the department has committed to provide upwards of $14.2 million dollars pending New Jersey legislative approval.

Milestones and Accomplishments

To date:

- All CSO points are on enforceable schedules.
- Planning initiatives for control of solids and floatables are nearly completed at all CSO points.
- Correction plans have been completed for 31% of the CSO points.
- Construction of control facilities is ongoing or near completion for 24 % of the CSO points.
- CSO monitoring and modeling activities are ongoing.

CSO Control Program – Phase II

In the next phase of the statewide control program, the DEP will bring combined sewer systems into compliance with the water quality-based provisions of the Clean Water Act. The department proposes to complete the remaining elements of the LTCP process by integrating the regulatory and facility planning activities of CSO owners and operators with the watershed management framework planning process. Activities proposed in this process include:

- Identification and notification of stakeholders;
- Development of additional water quality goals and hear additional concerns;
- Identification of areas of non-attainment and other water quality concerns;
- Identification of CSO and non-CSO sources of pollution;
- Development of corrective action plans and total maximum daily loads;
- Development and implementation of source controls; and
- Develop performance assessment indicators.

Over the past 30 years, secondary and tertiary treatment plant upgrades have made significant, lasting water quality improvements. Today, the combined efforts of citizens, environmental groups, government, and industry will build on past successes by working toward the elimination of combined storm sewer overflows into our rivers and streams. These cooperative partnerships, operating within a watershed-based framework, will continue to develop and implement new strategies for improving New Jersey's water quality.